

Please type a plus sign (+) inside this box

+

PTO/SB/08A (08-00)

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet 1 of 5

Complete if Known

Application Number	09/587,542
Filing Date	June 1, 2000
First Named Inventor	Luby, Michael G.
Group Art Unit	2756
Examiner Name	
Attorney Docket Number	019186-001610US

RECEIVED
MAR 07 2002
Technology Center 2100

U.S. PATENT DOCUMENTS

Examiner Initials *	Cite No. ¹	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code ² (if known)			
ANB	1.	6,292,514		Yamaguchi, et al.	09/18/01	
ANB	2.	5,992,737		Kubota	11/30/99	
ANB	3.	5,889,794		Mo, et al.	03/30/9	
ANB	4.	6,212,657		Wang, et al.	04/03/01	
ANB	5.	6,307,487		Luby	10/23/01	
ANB	6.	6,320,520		Luby	11/20/01	
ANB	7.	5,379,297		Glover, et al.	01/03/95	
ANB	8.	5,903,775		Murray	05/11/99	
ANB	9.	5,659,614		Bailey, III	08/19/97	
ANB	10.	6,011,590		Saukkonen	01/04/00	
ANB	11.	6,141,053		Saukkonen	10/31/00	
ANB	12.	4,365,338		McRae, et al.	12/21/82	
ANB	13.	5,432,787		Chethik	07/11/95	
ANB	14.	5,608,738		Matsushita	03/04/97	
ANB	15.	5,617,541		Albanese, et al.	04/01/97	
ANB	16.	5,805,825		Danneels, et al.	09/08/98	
ANB	17.	5,983,383		Wolf	11/09/99	
ANB	18.	5,993,056		Vaman, et al.	11/30/99	
ANB	19.	6,073,250		Luby, et al.	06/06/00	
ANB	20.	6,081,909		Luby, et al.	06/27/00	
ANB	21.	6,081,918		Spielman	06/27/00	
ANB	22.	6,163,870		Luby, et al.	12/19/00	
ANB	23.	6,178,536		Sorkin	01/23/01	
ANB	24.	6,195,777		Luby, et al.	02/27/01	
ANB	25.	6,185,265		Campanella	02/06/01	
ANB	26.	5,936,949		Pasternak, et al.	08/10/99	
ANB	27.	5,835,165		Keale, et al.	11/10/98	

Examiner
Signature

Almeida

Date
Considered

5/7/03

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

SF 1314160 v1



Please type a plus sign (+) inside this box



PTO/SB/08A (08-00)

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet **2** of **5**

Complete if Known

Application Number	09/587,542
Filing Date	June 1, 2000
First Named Inventor	Luby, Michael G.
Group Art Unit	2756
Examiner Name	
Attorney Docket Number	019186-001610US

RECEIVED
MAR 07 2002
Technology Center 2100

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
		Office ³	Number ⁴	Kind Code ⁵ (if known)				
ANB	28.	WIPO	WO 01/58130 A2		Rajwan	8/9/2001		
ANB	29.	WIPO	WO 01/58131 A2		Yosef, et al.	8/9/2001		
ANB	30.	WIPO	WO 01/57667 A1		Rajwan, et al.	8/9/2001		
ANB	31.	EPO	EP 0 854 650 A2		Djupsjöbacka, et al.	07/22/98		
ANB	32.	WIPO	WO 96 34463 A		Vaman, et al.	10/31/96		

Examiner
Signature

Shin Bantel

Date
Considered

5/7/03

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for

Patents, Washington, DC 20231

SF 1314160 v1



Please type a plus sign (+) inside this box →

+

PTO/SB/08B (08-00)

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number

Substitute for form 1449B/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet 3 of 5

Complete if Known

Application Number	09/587,542
Filing Date	June 1, 2000
First Named Inventor	Luby, Michael G.
Group Art Unit	2756
Examiner Name	
Attorney Docket Number	019186-001610US

RECEIVED
MAR 07 2002
Technology Center 2100

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS

Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
AMB	33.	ALON, et al., "Linear Time Erasure Codes With Nearly Optimal Recovery," Proceedings Of The Annual Symposium On Foundations Of Computer Science, US, Los Alamitos, IEEE Comp. Soc. Press, Vol. Symp. 36, Pages 512-516 (October 23, 1995), XP 000557871	
ANB	34.	BIGLOO, et al. "A Robust Rate-Adaptive Hybrid ARQ Scheme For Frequency-Hopped Spread-Spectrum Multiple-Access Communication Systems" IEEE Journal On Selected Areas In Communications, US, IEEE Inc, New York, (June 1 1994) pages 917-924, XP0000464977	
ANB	35.	BLÖMER, et al., "An XOR-Based Erasure-Resilient Coding Scheme," ICSI Technical Report No. TR-95-048 (1995) [avail. at ftp://ftp.icsi.berkeley.edu/pub/techreports/1995/tr-95-048.pdf]	
ANB	36.	BYERS, et al., "A Digital Fountain Approach to Reliable Distribution of Bulk Data", International Computer Science Institute Technical Report TR-98-013 (May, 1998) [available at ftp://ftp.icsi.berkeley.edu/pub/techreports/1998/tr-98-013.pdf]	
ANB	37.	BYERS, et al., "Accessing Multiple Mirror Sites in Parallel: Using Tornado Codes to Speed Up Downloads," International Computer Science Institute Technical Report TR-98-021 (1998) [available at http://www.icsi.berkeley.edu/~luby/PAPERS/mirrdwn.ps]	
ANB	38.	BYERS, et al. "Accessing Multiple Mirror Sites In Parallel: Using Tornado Codes To Speed Up Downloads" Proceeding IEEE Infocom. The Conference On Computer Communications, US New York, (March 21 1999) pages 275-283, XP000868811	
ANB	39.	ESAKI, et al. "Reliable IP Multicast Communication Over ATM Networks Using Forward Error Correction Policy" IEICE Transactions On Communications, JP, Institute of Electronics Information and Comm. ENG. Tokyo, vol. E78-V, No. 12, (December 1995), pages 1622-1637, XP000556183	

Examiner
Signature

Alvin Burtas

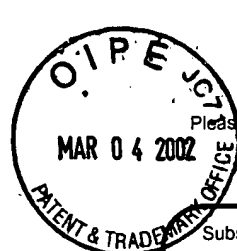
Date
Considered

5/7/03

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.
SF 1314160 v1



Please type a plus sign (+) inside this box →



PTO/SB/08B (08-00)

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number

Substitute for form 1449B/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet 4 of 5

Complete if Known

Application Number	09/587,542
Filing Date	June 1, 2000
First Named Inventor	Luby, Michael G.
Group Art Unit	2756
Examiner Name	
Attorney Docket Number	019186-001610US

RECEIVED
MAR 07 2002
Technology Center 2100

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS

Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
ANB	40.	LUBY, et al., "Analysis of Low Density Codes and Improved Designs Using Irregular Graphs", International Computer Science Institute Technical Report TR-97-045 (November, 1997) [available at ftp://ftp.icsi.berkeley.edu/pub/techreports/1997/tr-97-045.pdf]	
ANB	41.	LUBY, et al., "Analysis of Random Processes via And-Or Tree Evaluation," ICSI Technical Report No. TR-97-042 (1997) and Proceedings of the 9th Annual ACM Symposium on Discrete Algorithms (1998) [available at ftp://ftp.icsi.berkeley.edu/pub/techreports/1997/tr-97-042.pdf]	
ANB	42.	LUBY, et al., "Improved Low-density Parity-Check Codes Using Irregular Graphs and Belief Propagation", International Computer Science Institute Technical Report TR-97-044 (November, 1997) [available at ftp://ftp.icsi.berkeley.edu/pub/techreports/1997/tr-97-044.pdf]	
ANB	43.	LUBY, et al., "Tornado Codes," Practical Loss-Resilient Codes, 29th Annual ACM Symposium on Theory of Computing (1997)	
ANB	44.	PURSLEY, et al. "Variable-Rate Coding For Meteor-Burst Communications" IEEE Transactions on Communications, US, IEEE Inc. New York (1989) Vol. 37, No. 11, pages 1105-1112, XP000074533	
ANB	45.	SESHAN et al. "Handoffs In Cellular Wireless Networks: The Daedalus Implementation and Experience" Wireless Personal Communications, NL, Kluwer Academic Publishers, Vol. 4, No. 2, 1 March 1997, pages 141-162, XP000728589	
ANB	46.	SHACHAM, N., "Packet Recovery And Error Correction In High-Speed Wide-Area Networks," Proceedings Of The Military Communications Conference. (Milcom), US, New York, IEEE, Vol. 1, Pages 551-557, (1989), XP 000131876	

Examiner
Signature

Shir Borker

Date
Considered

5/7/03

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.
SF 1314160 v1



Please type a plus sign (+) inside this box →



PTO/SB/08B (08-00)

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number

Substitute for form 1449B/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet 5 of 5

Complete if Known

Application Number	09/587,542
Filing Date	June 1, 2000
First Named Inventor	Luby, Michael G.
Group Art Unit	2756
Examiner Name	
Attorney Docket Number	019186-001610US

RECEIVED
MAR 07 2002
Technology Center 2100

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS

Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
ANB	47.	VICISANO, et al., "TCP-like Congestion Control for Layered Multicast Data Transfer", IEEE Infocom '98 (San Francisco, CA, Mar. 28-Apr. 1, 1998)	
ANB	48.	McCANNE, et al., "Receiver-Driven Layered Multicast", Proc. ACM SIGCOMM, pp. 117-130 (Stanford, CA, August 1996)	

Examiner
Signature

John Burt

Date
Considered

5/7/03

¹ EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

² Unique citation designation number. ² Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.
SF 1314160 v1